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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK, NY 10151

| EXAMINER |
|---|
| MUNOZ, GUILLERMO |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2634 | 9 |

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 09/591,995 | SPALINK, GERD |
| | Examiner | Art Unit |
| | Guillermo Munoz | 2634 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 June 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 8, and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Washington et al (US Patent Number 5,920,572).

In regards to claim 1; Washington et al teaches a transport stream decoder/demultiplexer comprising:

- "Illustratively, the packet framer 120 locks onto the boundaries of the transport packets and maintains the synchronization with the transport packets utilizing a lock/unlock hysteresis process. As noted above, MPEG-2 requires that all transport packets begin with a predetermined sync byte. The packet framer 120 performs a bit-by-bit search to identify a byte that is the same as the predetermined sync byte. However, the packet framer may not in fact have found the sync byte of a transport packet. Instead, the packet framer may have identified an arbitrary sequence of bits within a transport packet which resembles the sync byte. To verify whether or not the sync byte was detected, the packet framer 120 presumes that the sync byte was detected. The packet framer 120 then attempts to identify the sync byte in each of a consecutive sequence of packets, using the detected "sync byte" as a basis for identifying packet boundaries. If the packet framer 120 is able to identify a sync byte in a threshold (sync_lock) number of consecutive

transport packets, then the packet framer 120 can presume that it has identified the boundaries of the transport packets with the transport stream and is locked in synchronism thereto. Once synchronization is locked, the packet framer 120 monitors the receipt of sync bytes in transport packets. If the packet framer 120 fails to detect a sync byte in a threshold (sync_unlock) number of consecutive transport packets, then the packet framer 120 presumes that it is no longer synchronized to the transport packet boundaries" (col.10, line 60-col.11, line 20).

The transport stream decoder/demultiplexer anticipates claimed channel decoder comprising a synchronization byte detector that provides a lock detected output signal indicating the lock-in of the receiver to one broadcast channel which is used as a feed forward and/or feed-back signal in claim 1, lines 1-5.

- "If the byte thus formed is the same as the sync byte, the comparator 1220 outputs a match signal that indicates that a match occurred. The match signal increments the sync_lock counter 1230. The non-zero count is detected in the state machine 1250. In step 410, the state machine 1250 responds to the non-zero count of the sync_lock counter 1230 by adjusting the frequency with which the enable signal is generated. In particular, the state machine 1250 does not enable the comparator 1220 until the 188.sup.th byte, from the matching byte, in the transport stream is received. In other words, the matching byte is presumed to be the sync byte of a transport packet. If such is in fact the case, then another sync byte, of the very next packet will occur precisely 188 bytes later in the transport stream. In step 412, the comparator 1220 is enabled 188 bytes later by the state machine 1250 and determines if the byte outputted by the byte formatter 1210 is the same

as the predetermined sync byte. If not, then the comparator 1220 outputs a match signal indicating that no match has occurred, the count of the sync.. lock counter 1230 is not incremented, and the state machine 1250, under the presumption that the boundary of the transport packets have no yet been identified, responds by performing the initialization steps. In other words, execution returns to step 402" (col.12, lines 12-35).

Adjusting the frequency with which the enable signal is generated anticipates claimed to respectively switch processing stages succeeding and/or preceding said synchronization byte detector into a different mode dependent on whether or not lock has been achieved in claim 1, lines 5-7.

In regards to claim 8; as applied to claim 1 above, Washington et al teaches a transport stream decoder/demultiplexer wherein:

- "the present invention relates to streams in which video and audio of one or more programs are multiplexed into a transport layer stream" (col.1, lines 9-11).

The streams of video and audio of one or more programs anticipate claimed decoder used in a DVB or DAB receiver in claim 8.

In regards to claim 9; as applied to claim 1 above, Washington et al teaches a transport stream decoder/demultiplexer wherein:

- "the transmission channel may include RF transmitters, satellite transponders, optical fibers, coaxial cables, unshielded twisted pairs of wires, switches, in-line amplifiers, etc" (col.2, lines 29-32).

The decoder adapted for RF transmitters, satellite transponders, or optical fibers anticipates claimed decoder used for satellite, cable or terrestrial reception in claim 9.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washington et al (US Patent Number 5,920,572) in view of Lee (US Patent Number 6,373,861 B1), Lin et al (US Patent Number 2003/0058967 A1) and Dumont et al (US Patent Number 6,154,642).

In regards to claim 2; as applied to claim 1 above, Washington et al teaches a transport stream decoder/demultiplexer wherein:

- "The invention is illustrated herein for transport streams which are transmitted via a transmission channel" (col.1, lines 62-63).
- "the transmission channel may include RF transmitters, satellite transponders, optical fibers, coaxial cables, unshielded twisted pairs of wires, switches, in-line amplifiers, etc" (col.2, lines 29-32).

Washington et al teaches a transport stream decoder/demultiplexer that can be adapted for use in RF transmitters or satellite transponders. However, Washington et al does not teach the details of the adaptation.

Lee teaches a modulation demodulation device in an orthogonal frequency division multiplexing system wherein:

- "frequency synchronization used for receiver of the OFDM system is performed in two steps, namely, a coarse synchronization and a fine synchronization. The coarse synchronization step removes an initial frequency offset corresponding to multiples of the sub-carrier interval, and the fine synchronization step removes the residual frequency offset remaining after coarse synchronization" (col.2, lines 49-56).
- "With regard to the coarse frequency synchronizing method, a controller 195 controls the overall operation of the frequency synchronizing device. In particular, the controller 195 outputs a coarse delay signal for performing initial coarse frequency synchronization, outputs a regular delay signal after acquiring coarse frequency synchronization, and outputs a fine delay signal after acquiring regular frequency synchronization. A delay 164 delays an OFDM frame output from the ADC 162 for a predetermined time" (col.7, lines 8-16).

The transmission from coarse to fine synchronization step anticipates claimed synchronization byte detector getting switched from a robust mode used for acquisition of a broadcast channel to a locked mode used in case only small deviations of an acquired broadcast channel need to be compensated in case of lock-in of the receiver and vice versa in case the receiver is not locked-in in claim 2.

Therefore, it would have been obvious to adapt the decoder of Washington et al to the digital transmission system of Lee for the purpose of receiving transmission channels from RF transmitters.

In regards to claims 3, 4, and 7; as applied to claim 1 above, Washington et al teaches a transport stream decoder/demultiplexer wherein:

- "The invention is illustrated herein for transport streams which are transmitted via a transmission channel" (col.1, lines 62-63).
- "the transmission channel may include RF transmitters, satellite transponders, optical fibers, coaxial cables, unshielded twisted pairs of wires, switches, in-line amplifiers, etc" (col.2, lines 29-32).

Washington et al teaches a transport stream decoder/demultiplexer that can be adapted for use in RF transmitters or satellite transponders. However, Washington et al does not teach the details of the adaptation.

Lin et al teaches a system for, and method of recovering digitally modulated television signals comprising:

- "Following configuration download the receiver 10 must acquire lock, i.e. synchronize its acquisition and tracking loop circuitry 30 to the frequency and phase of a remote transmitter. Receiver lock is a multi-step process which generally involves allowing the various acquisitions/tracking loops to acquire lock in a predetermined manner. For example, the AGC loops are generally allowed to acquire first, in order to ensure that the signal level at the input to the A/D converter 14 is set appropriately. AGC bandwidths are initially set wide open in order to minimize acquisition time and subsequently reduced to provide adequate tracking and minimal noise" (page 4, par. 0055).

The AGC bandwidths initially set wide open and subsequently reduced anticipate claimed loop bandwidth that gets switched from a wide bandwidth mode to a narrow bandwidth mode in claim 3.

The acquisitions/tracking loops anticipate claimed adaptive equalizer that gets switched from an acquisition mode to a tracking mode in claim 4.

The receiver lock anticipates claimed lock detected output signal to other processing stages within the receiver in claim 7.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the decoder of Washington et al to the digital recovery system of Lin et al for the purpose of receiving transmission channels from RF transmitters.

In regards to claims 5 and 6; as applied to claim 1 above, Washington et al teaches a transport stream decoder/demultiplexer wherein:

- "The invention is illustrated herein for transport streams which are transmitted via a transmission channel" (col.1, lines 62-63).
- "The transmission channel 60 may be a telephone network, a cable television network, a computer data network, a terrestrial broadcast system, or some combination thereof." (col.2, lines 26-29).

Washington et al teaches a transport stream decoder/demultiplexer that can be adapted for use in telephone network or a terrestrial broadcast system or a combination of the two. However, Washington et al does not teach the details of the adaptation.

Dumont et al teaches a digital wireless communications system wherein:

- "The handset can adopt an active mode and a power down or sleep mode, inter alia. The shown power management block controls various parts of the handset to be switched off when the handset adopts the power down mode" (col.1, lines 41-45).

- "If an error of two clock periods can be undone per frame of 125 microseconds, at least 40 speech frames in advance of the reception of the next synchronization pattern or 12 time slots spanning 5 milliseconds will be needed to correct the accumulated phase error" (col. 6, lines 5-9)
- "In power down mode undoing can be done much faster because no speech signal is present then" (col.6, lines 20-21).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to power down various parts of the decoder of Washington et al in view of Dumont et al for the purpose of reducing the synchronization period.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 703-305-4224. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Guillermo Munoz

GM
August 21, 2003

STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600